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Problem/Defect Tracking and Resolution Process

Purpose:

The purpose of the problem/defect reporting process is to log and track identified errors and problems with the system to ensure they are corrected. The problem system deals primarily with deviations from the current requirements (as opposed to the change control system that deals with changes to requirements). This process has many names including defect tracking, bug tracking, anomaly tracking and error tracking.

Problem tracking begins once the code/COTS package is delivered for unit or integration testing and continues until the system is retired. Problems may be identified by the developers, the users, or project staff. Once the system is in production, most problems initially will be reported to the help desk who will then forward them to the problem reporting system, as appropriate.

Process Relationships and Dependencies:

- [To the SID Lifecycle Framework](#) (the big picture)
- [To the Primary Processes](#)
- [To the Supporting Processes](#)
- [To Other Processes](#)

Process Details:

- [General Approach to the Process](#)
- [General Process Steps](#)
- [Work Products and Deliverables](#)

Tools:

- MS Excel or MS Access

References:

- IEEE [12207.0-1996](#) - Standard for IT Software Life Cycle Processes, Section 6 - Supporting Lifecycle Processes, Problem Resolution Process (link to pdf)

Samples:

- [Request Comparison Matrix](#) (MS Word)


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[CMM](#)
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[The Project Office](#)
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Problem/Defect Tracking Approach

[Prob/Defect Main](#)

General Approaches to Problem/Defect Tracking:

There are the three approaches generally used by SID to implement a problem/defect tracking process. Usually the development/integrating organization is responsible for the problem/defect tracking system and process, but provides reports and metrics on the process performance and tracking system.

- **Project Office Responsibility** - The project may choose to operate the problem/defect tracking system and serve as the main customer service point of contact, if staffing and budget permit. In this case, the project usually serves as a combination help desk/problem tracking center. This occurs most frequently when the project is also the development/integration organization.
- **Prime Contractor Responsibility** - The contractor may be responsible for the problem/defect tracking process. In this case, the requirements and expectations should be clearly stated in the RFP/ITP, including service level metrics, required reports, and periodic audits and reviews of the process and problem tracking database/system.

General Process Steps for Problem/Defect Tracking:

The following are the primary steps involved in the problem/defect tracking process. These steps are similar to the steps for issue and change request tracking.

1. Identification and recording of the problem/defect.
2. Analysis of the problem/defect, including impacts, alternatives and workarounds
3. Review and approval of the proposed problem resolution
4. Implementation of the proposed problem resolution
5. Verification of the resolution
6. Closure of the problem/defect ticket

Work Products and Deliverables:

- Problem/Defect Tracking Process
- Problem/Defect Tracking Form
- Minutes from Problem/Defect Tracking Review Meeting
 - Or the signed tracking form if a meeting is not convened
- Problem/Defect Tracking Process Performance Metrics
 - Average number of days to complete an approved problem ticket
 - Average number of days to analyze a problem ticket
 - Number of tickets awaiting approval (for review or verification)
 - Oldest open ticket (number of days)
 - Oldest high-priority open ticket (number of days)
- Problem/Defect Tracking Database Metrics

- Number of open problem tickets
- Number of tickets opened for the month
- Number of tickets closed during the month
- Total number of tickets in the system

Request Comparison Matrix

	ISSUE	PROBLEM REPORTS	HELP DESK TICKET	CHANGE REQUEST
Definition	A statement of concern or need that is formally recorded and tracked that... - is known ahead of time, or is in the project workplan, but whose resolution is in question or lacking agreement among stakeholders; - is highly visible or involve external stakeholders such as requests from control agencies; - has critical deadlines or timeframes which cannot be missed; - Results in an important decision or resolution whose rationale and activities must be captured for historical reasons; or - May impede project progress ¹ .	An instance where the system, application, or environment does not behave as expected. Also referred to as - defects - incidents - fixes	A record of a call/contact by a user/stakeholder regarding a POTENTIAL problem or a question. If the item can be addressed by the help desk the item is closed. If the item cannot be addressed by the help desk, it usually is converted/forwarded to the Problem Report process.	A request to change the existing functionality or scope of the system/application. The system current works as expected, but additional or new functionality may be desired.
Relationships	Issues may trigger change requests or risks.	Problems may trigger issues to determine the appropriate resolution	Tickets may trigger issues, problems or change requests	Change requests may trigger issues to determine the appropriate resolution
Decision Body	PMs	PMs or CCB	Help Desk Manager	CCB
Applicable Phase(s)	All (Initiation thru Closeout)	Starts in Unit Testing	After Implementation	After requirements are baselined (either during Procurement or Development)
Typical Result	New and/or updated policy, requirement, approach	Code fix implemented in system	User problem resolved or forwarded to other request system	New functionality implemented in system
Responsibility	Project; Contractor may also have their own internal system	Developing Organization	Either Project or Contractor	Project and/or Contractor ²

¹ If an issue it is known that an issue is likely to impede project progress, it should be tracked as a risk, or it may be tracked both as an issue (for analysis) and a risk (for mitigation and/or contingency actions).

² Usually project has their change request system and the contractor has their own system and they cross-reference. Or the project can have the only system.

Note: Items in parentheses are considered optional, depending on the request and the project's approach to tracking.

Request Comparison Matrix

Typical Fields

	Issues	Problem Reports	Help Desk Items	Change Requests
Unique Tracking Number	x	x	x	x
Date of Report	x	x	Date and Time	x
Title	x	x	x	x
Status of Request/Date	x	x	x	x
Category/Type	x	x	x	x
Version Detected		z	z	z
Phase Detected	x	x	x	x
Phase Corrected	(x)	x	(x)	x
Escalated To/Date	x		x	x
Contact Information				
Author	x	x	x	x
County/Office Location	x	x	x	x
Author Phone	x	x	x	x
Item Information				
Date of Occurrence	x	x	x	x
Need Date or Date of Anticipated Impact	x	x	(x)	x
Description of Item	x	x	x	x
Analysis Information				
Analyst Assigned To/Date	x	x	x	x
Impact Analysis	x	x	x	x
Scope Impact	(x ³)			x
Customer Impact	(x ³)	x	x	x
Dependencies/Conflicts	x	x	x	x
Training Impacts/Changes	(x ³)	x	x	x
Impacts on other pending	x	x	x	x

³ Not all issues will require a scope, customer, training impact, etc. field. For instance, an issue involving a policy change decision may affect cost, schedule, training, etc.; an issue involving a stakeholder request for information would not.

Note: Items in parentheses are considered optional, depending on the request and the project's approach to tracking.

Request Comparison Matrix

	Issues	Problem Reports	Help Desk Items	Change Requests
Changes/Problems/Issues				
Impacts to system performance/capacity	x	x	x	x
Severity of Problem	(x ³)	x	x	
Proposed Solution/Alternatives	x	x	x	x
Affected Areas	x	x	x	x
Applicable/Affected Requirements	(x ³)	x	x	x
Affected Documentation	(x ³)	x	x	x
Work-around	(x ³)	x	x	x
Risks	x			x
Proposed Cost	(x ³)			x
Proposed Schedule Impacts	(x ³)	x	x	x
Analysis Time/Completed Date	x	x	x	x
Cross-reference to other Issues, Problems, Changes, Risks, Calls	x	x	x	x
Decision Information				
Approved Resolution	x	x	x	x
Approved By/Date	x	x		x
Assigned To for Resolution/Date	x	x	x	x
Due Date	x	x	x	x
Priority	x	x	x	x
Resolution Information				
Progress Notes/Date	x	x	x	x
Implementation Time	x	x	x	x
Closed By/Date	x	x	x	x
Verified By/Date		x	(x)	x
Test ID/Date		z	(x)	x
Verification Time		x	(x)	x
Implemented Version of Code/Release Number		x	(x)	x
Updated Document Versions	(x ³)	x	x	x
Prevention/Process Improvement		x	x	x

Note: Items in parentheses are considered optional, depending on the request and the project's approach to tracking.

Request Comparison Matrix

	Issues	Problem Reports	Help Desk Items	Change Requests
Notes/Comments	x	x	x	x

Note: Items in parentheses are considered optional, depending on the request and the project's approach to tracking.